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10/520,645

01/05/2005

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05/18/2007

EXAMINER

LAM, CATHY FONG FONG

ART UNIT

PAPER NUMBER

1775

MAIL DATE

DELIVERY MODE

05/18/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/520,645

Applicant(s)

BESSEDE ET AL.

Examiner

Cathy Lam

Art Unit

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-9, 13 and 14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9, 13 and 14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 04-25-2005.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

In view of the amendment and remarks filed on February 28, 2007, the pending claims are unpatentable as following:

***Claim Rejections - 35 USC § 112***

1. Claims 1 and its dependents are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, it is vague and indefinite as to whether the resistance is referring to the graphite, the electrically conductive material (i.e. without the graphite) or the matrix that includes the graphite and the electrically conductive material (or copper)?

Clarification is required.

***Claim Rejections - 35 USC § 102***

2. Claims 1, 7, 10, 13-14 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Gessinger et al (US 4707576).

Gessinger discloses an electric circuit breaker which comprised of two arcing contact tips (6,8), the examiner is taking the position that this is analogous to the claimed arcing contact elements (10,18).

The arcing contact tips (6,8) is made from a carbon fiber reinforced graphite and a metal carrier (or matrix) (col 3 L 62).

Although the prior art is silent about the resistance of the electrically conductive material, the examiner is taking the position that it would be inherent that Gessinger's graphite and metal carrier possess the same resistance.

3. Claims 1, 7-10, 13-14 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Swift et al (US 5599615).

Swift teaches an electrical component for making electrical contact, comprised of conductive fibers and a metallic matrix (col 3 L 25-26).

The conductive fibers are carbon fibers having diameter from about 4 to 10  $\mu\text{m}$  (col 3 L 56-60). The conductive fibers can be a carbon/graphite fibers or metal plated carbon fibers (col 6 L 10-11). Swift hinted that the graphite would be in the form of powder (if used) (col 6 L 14-15).

The carbon fibers are embedded in a metallic matrix which may contain copper (col 6 L 44-66).

The metallic matrix has a volume resistivity of less than 100  $\mu\Omega\text{-cm}$  (col 6 L 44-46).

***Claim Rejections - 35 USC § 103***

4. Claims 1-9 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0729162 A1 and FR 2115865.

Both French documents submitted by Applicant teach a composite comprised of carbon fiber and a copper matrix.

EP 0729162 A1 teaches a carbon or graphite fiber is coated with metal powder such as copper (col 1 1<sup>st</sup> ¶).

FR 2115865 teaches a graphite fiber is within a copper matrix (page 3 last ¶ & page 4 1<sup>st</sup> ¶).

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The prior art does not teach each carbon fiber and graphite fiber are used together, nor do they disclose the resistance. However, one skill in the art would use carbon and graphite interchangeably because carbon and graphite are from the same element and have similar properties, i.e. they are both electrically conductive as well as heat conductive, and are vastly used in electronic devices.

5. Claims 2-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swift et al (US 5599615).

Swift teaches the present invention but does not teach the carbon fibers are arranged in a 3-D braiding. Swift is silent about the wt% for the conductive material (assuming applicant is referring to the metallic matrix) and any particle sizes for the fibers or fillers.

In view of Swift's teaching, one skill in the art would choose a desired fiber arrangement, the weight ratio of the metallic matrix to the reinforcement material, etc. because these are only a matter of design choices. The fact that Swift clearly teaches the concept of the present invention.

### ***Response to Arguments***

6. Applicant's arguments filed on February 26, 2007 have been fully considered but they are not persuasive. Applicant disagrees the art rejections and raises the following issues:

- A. Gessinger includes Cr particles applied to the surface of the graphite platelet 25.
- B. Swift does not include graphite in the matrix.

In respond to the above issues:

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A. Since in the base claims, applicant only claims an electrically conducting material, Cr clearly meets this limitation. Applicant is required to show that Cr particles which is used as a metallic matrix does not possess the claimed resistance.

B. Swift may not teach the fibers include graphite powder, but the fibers can be carbon/graphite fibers (col 6 L 10-11). The examiner is taking the position that particles do not always comes in a bead form, it can be a fibrous shape or a staple shape, etc. Thus, Swift meets the present invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cathy Lam whose telephone number is (571) 272-1538. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Cathy Lam  
Primary Examiner  
Art Unit 1775

cfl  
August 17, 2006